**Testing for Macromolecules Lab**

**INTRODUCTION:**

One characteristic of life is that living things are made up of molecules containing carbon. These are called ORGANIC MOLECULES. In our class we have been referring to them as macromolecules since they are necessary for life. The most common organic compounds found in living organisms are LIPIDS, CARBOHYDRATES, PROTEINS, and NUCLEIC ACIDS. Common foods, which often consist of plant materials or substances derived from animals, are also combinations of these organic compounds. Simple chemical tests with substances called indicators can be conducted to determine the presence of organic compounds. A color change of an indicator is usually a positive test for the presence of an organic compound.

**SCIENCTIFIC QUESTION:** What macromolecules are present in milk, canola oil, water, and potatoes?

**HYPOTHESIS:** Write a hypothesis before conducting the lab

*If milk, canola oil, water, and potatoes are tested for macromolecules, then \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*

*because \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.*

**MATERIALS**:

Milk

Potato

Water

Canola oil

Pipettes

Well plate

Iodine indicator

Sudan III indicator

Biuret indicator

**PROCEDURE**:

1. Collect your well plate

2. Fill each well halfway using the pipette. Fill well 1 with water, 2 with oil, 3 with milk, and 4 with potato.

3. Fill well 5-8 in the same order. Fill well 9-12 in the same order.

4. Place 5 drops of iodine indication into wells 1-4 and record the color in the data table.

5. Place 5 drops of Sudan III indication into wells 5-8 and record the color in the data table.

6. Place 5 drops of Biuretindication into wells 9-12 and record the color in the data table.

7. Clean and dry well plate

**DATA:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Material Tested | **Iodine Test Color** | **(+) or (-)** | **Sudan III Test**  **Color** | **(+) or (-)** | **Biuret Test**  **Color** | **(+) or (-)** |
| 1. Water |  |  |  |  |  |  |
| 1. Canola Oil |  |  |  |  |  |  |
| 1. Milk |  |  |  |  |  |  |
| 1. Potato |  |  |  |  |  |  |

**DATA ANALYSIS:**

1. What is an indicator?
2. What purpose did the well containing only distilled water serve?
3. Which substances are carbohydrate, lipids, and proteins?
4. Why did the lab not test for nucleic acids? Which substances contain nucleic acids?

**CONCLUSION:**

Write a conclusion to summarize your results and to answer the questions in the lab.

Remember to use SHADE.